NBSIR 88-3097

METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NBS PUBLICATIONS

Edited by
Mary E. DeWeese

National Bureau of Standards
U.S. Department of Commerce
Boulder, Colorado 80303

August 1988

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Center for Electronics and Electrical Engineering
National Engineering Laboratory
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U.S. DEPARTMENT OF COMMERCE, C. William Verity, Secretary
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, Director

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METROLOGY FOR ELECTROMAGNETIC TECHNOLOGY: A BIBLIOGRAPHY OF NBS PUBLICATIONS

Mary E. DeWeese, Editor

This bibliography lists the publications of the personnel of the Electromagnetic Technology Division of NBS in the period from January 1970 through publication of this report. A few earlier references that are directly related to the present work of the Division are also included.

Key words: cryoelectronics; electromagnetic metrology; lasers; optical fibers; superconducting materials

INTRODUCTION

R. A. Kamper

The Electromagnetic Technology Division was formed during the reorganization of NBS in April 1978 by combining parts of the former Electromagnetics and Cryogenics Divisions. It develops measurement methods and standards and provides metrological support for laser systems, optical communication equipment, cryoelectronics, superconductors, and other unusual electrical engineering materials. For the individual staff members of the division, the reorganization brought a realignment of long-term goals but little immediate discontinuity in their work. It therefore makes good sense that this bibliography should cover a period beginning some time before the reorganization, so as to include at least the more recent origins of the present work of the division. The editors have attempted to include all work published by the present staff members of the division, while they were employees of NBS, in the period from January 1970 through publication of this report. There are a few exceptions, where work that is totally unrelated to the present program has been excluded or where work by authors now in other parts of NBS has been included because of its special significance. A few papers on various topics published before 1970 have also been included because of their direct relationship to the present program.

Several other sources may be useful to the reader who is interested in activities at NBS connected with electromagnetic metrology. A companion bibliography to this one lists the publications of the Electro- magnetic Fields Division: NBSIR 85-3040. Its topics include metrology for antennas, satellite communications equipment, microwave metrology, electromagnetic waveform metrology, electromagnetic interference, and hazard. An excellent summary of the whole field of electromagnetic metrology as it stood in 1967 was published as a special issue of the IEEE Proceedings (vol. 55; June 1967). Advances in the following decade were described in two other special issues of the same journal (vol. 66, April 1978; and vol. 74, January 1986).

A Note on Abbreviations

Most readers are familiar with the commonly used abbreviations for the names of the professional journals that appear in this bibliography. Some publication series are peculiar to NBS and may call for explanation. They are:

NBSIR - NBS Interagency/Internal Report
NBS TN - NBS Technical Note
NBS SP - NBS Special Publication
NBS HB - NBS Handbook
NBS JRES - NBS Journal of Research
NBS MN - NBS Monograph

Purchase Procedures and Document Availability

NBS Technical Notes, Special Publications, Handbooks, Journals of Research, and Monographs may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Orders must be accompanied by postal money order, express money order, or check made out to the Superintendent of Documents.

NBS Interagency/Internal Reports (NBSIRs) may be purchased from the National Technical Information Service, Springfield, VA 22161. Orders must be accompanied by postal money order, express money order, or check made out to NTIS.

Reprints of papers published in non-NBS media may be available in limited quantities from the authors.

Acknowledgments

A large part of the labor of preparing a bibliography is spent on collecting and arranging the material. We thank Sheila Aaker, Frances Brown, Kit Kline, and Jessie Page for their assistance with these chores. The prime source of material was the NTIS file. This was supplemented with material supplied by individual authors.

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NBS-114A (REV. 2-8C)

U.S. DEPT. OF COMM. BIBLIOGRAPHIC DATA SHEET (See instructions)	1. PUBLICATION OR REPORT NO. NBSIR 88-3097	2. Performing Organ. Report No. B88-0227	3. Publication Date August 1988

4. TITLE AND SUBTITLE

Metrology for Electromagnetic Technology: A Bibliography of NBS Publications

5. AUTHOR(S)

Mary E. DeWeese, Editor

6. PERFORMING ORGANIZATION (If joint or other than NBS, see instructions)

NATIONAL BUREAU OF STANDARDS
DEPARTMENT OF COMMERCE
WASHINGTON, D.C. 20234

7. Contract/Grant No.

8. Type of Report & Period Covered

9. SPONSORING ORGANIZATION NAME AND COMPLETE ADDRESS (Street, City, State, ZIP)

10. SUPPLEMENTARY NOTES

Supersedes NBSIR 87-3074

☐ Document describes a computer program; SF-185, FIPS Software Summary, is attached.

11. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here)

This bibliography lists the publications of the personnel of the Electromagnetic Technology Division of NBS in the period from January 1970 through publication of this report. A few earlier references that are directly related to the present work of the Division are also included.

12. KEY WORDS (Six to twelve entries; alphabetical order; capitalize only proper names; and separate key words by semicolons)

cryoelectronics; electromagnetic metrology; lasers; optical fibers; superconducting materials

13. AVAILABILITY

☒ Unlimited

☐ For Official Distribution. Do Not Release to NTIS

☐ Order From Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

☒ Order From National Technical Information Service (NTIS), Springfield, VA. 22161

14. NO. OF PRINTED PAGES

64

15. Price

☆ U.S. GOVERNMENT PRINTING OFFICE: 1988—576-904 85,247 REGION NO. 8